IN THE CLAIMS

The claims presently appear as follows.

1.   (Currently Amended) A method for providing Quality of Service (QoS) routing of a network packet, the method comprising inserting a QoS code into an Internet Protocol (IP) address of the network packet, wherein the QoS code becomes part of the IP address and uses four bits of the IP address to represented the QoS code and is defined in unused portions of the IP address.

2.   (Original) The method in accordance with claim 1 further comprising:

checking unused bits of the IP address to read the QoS code upon receiving the network packet at an intermediate node on a network; and

re-transmitting the received network packet from the intermediate node with the QoS indicated by the QoS code.

3.   (Original) The method in accordance with claim 2 further comprising storing the QoS code in the intermediate node.

4.   (Original) The method in accordance with claim 1 wherein the IP address comprises an IP version 6 address.

5.   (Previously Presented) A method for providing quality of service (QoS) routing of a network packet, the method comprising:

checking unused bits of an Internet Protocol (IP) address associated with the network packet to read a QoS code therein upon receiving the network packet at an intermediate node on a network, and wherein the QoS code is part of the IP address and included within the unused bits of the IP address; and

forwarding the received network packet from the intermediate node with the QoS indicated by the QoS code.

6.   (Original) The method in accordance with claim 5 further comprising storing the QoS code in the intermediate node.

7.   (Original) The method in accordance with claim 6 wherein the IP address comprises an IP version 6 address.

8.   (Currently Amended) A method for providing quality of service (QoS) routing of a network packet, the method comprising:

        associating one of a plurality of QoS codes with one of a plurality of QoS levels;

        inserting one of the QoS codes into ~~unused bits of~~ an IPv6 address of the network packet wherein the QoS codes are <u>represented as four bits and are</u> part of the IPv6 address ~~and included in unused bits of the IPv6 address~~;

        checking ~~the unused bits of~~ the IPv6 address to read the QoS code therein upon receiving the network packet at an intermediate node on a network; and

        forwarding the received network packet from the intermediate node with the QoS indicated by the QoS code.

9.   (Original) The method in accordance with claim 8 further comprising the step of storing the QoS code in the intermediate node.

10.   (Currently Amended) Apparatus for providing Quality of Service (QoS) routing of a network packet, the apparatus comprising means for inserting a QoS code into an Internet Protocol (IP) address of the network packet, wherein the QoS code is part of the IP address <u>and</u> <u>is represented as four bits within the IP address</u> ~~and is included in unused portions of that IP address~~.

11.   (Previously Presented) The apparatus in accordance with claim 10 further comprising:

means for checking unused bits of the IP address to read the QoS code upon receiving the network packet at an intermediate node on a network; and

means for forwarding the received network packet from the intermediate node with the QoS indicated by the QoS code.

12.   (Original) The apparatus in accordance with claim 11 further comprising means for storing the QoS code in the intermediate node.

13.   (Currently Amended) Apparatus for providing quality of service (QoS) routing of a network packet, the apparatus comprising:

means for checking ~~unused~~ four bits of an Internet Protocol (IP) address associated with the network packet to read a QoS code therein upon receiving the network packet at an intermediate node on a network, wherein the QoS code is part of the IP address ~~and included within the unused bits~~; and

means for forwarding the received network packet from the intermediate node with the QoS indicated by the QoS code.

14.   (Previously Presented) The apparatus in accordance with claim 13 further comprising means for storing the QoS code in the intermediate node.

15.   (Previously Presented) The apparatus in accordance with claim 14 wherein the IP address comprises an IP version 6 address.

16.   (Currently Amended) The computer readable medium containing executable instructions for providing Quality of Service (QoS) routing of a network packet through a network, the executable program instructions comprising program instructions for inserting a four bit QoS code into an Internet Protocol (IP) address of the network packet, wherein the QoS code becomes part of the IP address ~~and is included in unused bits of the IP address~~.

17.   (Previously Presented) The computer readable medium in accordance with claim 16, wherein the executable program instructions further comprise program instructions for associating one of a plurality of QoS codes with one of a plurality of QoS levels.

18.   (Previously Presented) The computer readable medium in accordance with claim 16, wherein the executable program instructions further comprise program instructions for:

checking unused bits of the IP address to read the QoS code upon receiving the network packet at an intermediate node on a network; and

forwarding the received network packet from the intermediate node with the QoS indicated by the QoS code.

19.   (Original) The computer readable medium in accordance with claim 18, wherein the executable program instructions further comprises program instructions for storing the QoS code in the intermediate node.

20.   (Original) The computer readable medium in accordance with claim 19, wherein the IP address comprises an IP version 6 address.

21.   (Currently Amended) A computer readable medium containing executable instructions for providing Quality of Service (QoS) routing of a network packet through a network, the executable program instructions comprising program instructions for:

checking ~~unused bits of~~ an Internet Protocol (IP) address associated with the network packet to read a QoS code therein upon receiving the network packet at an intermediate node on a network, wherein the QoS code is part of the IP address <u>as four bits of information</u> ~~and included in the unused bits~~; and

forwarding the received network packet from the intermediate node with the QoS indicated by the QoS code.

22.   (Previously Presented) The computer readable medium in accordance with claim 21,

wherein the executable program instructions further comprise program instructions for

associating one of a plurality of QoS codes with one of a plurality of QoS levels.

23.   (Currently Amended) A method for providing Quality of Service (QoS) routing of a

network packet through intermediate nodes on a network, said method comprising the steps of:

        checking ~~unused bits of~~ an Internet Protocol (IP) address associated with the network

packet to read a QoS code therein upon receiving the network packet at an intermediate node on

a network, wherein the QoS code is part of the IP address <u>four</u> ~~and is included in the unused~~ bits

of the IP address;

        storing the network packets in queues based upon the QoS indicated by the QoS code;

        reading said network packets from said queues in a preferential manner; and

        forwarding the stored network packets read from the queues with the QoS indicated by

the QoS code.

24.   (Previously Presented) The method in accordance with claim 23 further comprising the

steps of:

        associating one of a plurality of QoS codes with one of a plurality of QoS levels;

        storing the plurality of QoS codes in the intermediate node; and

        determining the QoS level that a network packet should be retransmitted with by using

the QoS code read from the network packet during the step of checking unused bits to identify

the associated QoS level.

25.   (Original) The method in accordance with claim 24 wherein the IP address is an IP

version 6 address.